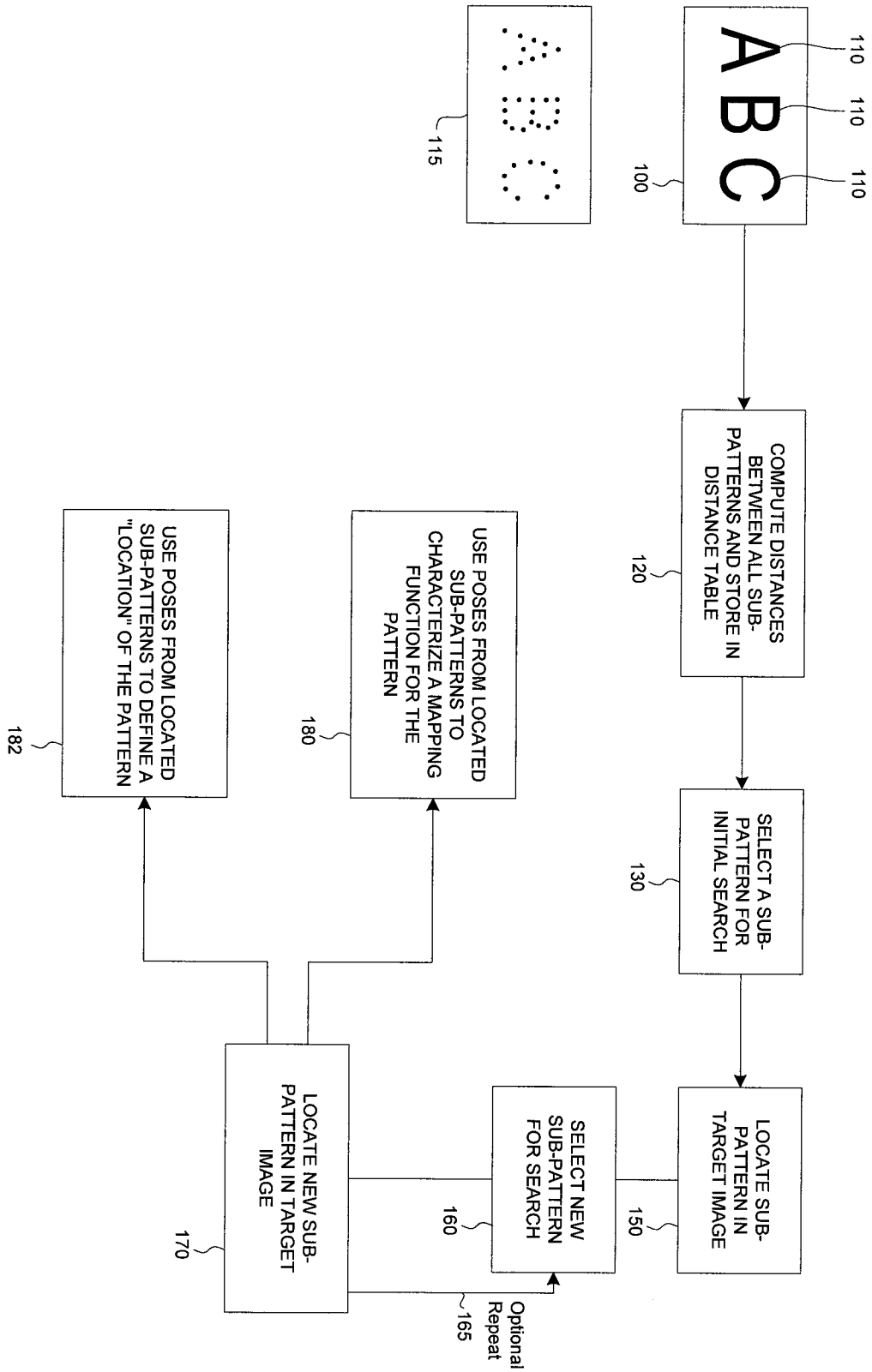

A B C
110
110
110
100
115
COMPUTE DISTANCES BETWEEN ALL SUB-PATTERNS AND STORE IN DISTANCE TABLE
120
SELECT A SUB-PATTERN FOR INITIAL SEARCH
130
LOCATE SUB-PATTERN IN TARGET IMAGE
150
SELECT NEW SUB-PATTERN FOR SEARCH
160
LOCATE NEW SUB-PATTERN IN TARGET IMAGE
170
Optional Repeat
165
USE POSES FROM LOCATED SUB-PATTERNS TO CHARACTERIZE A MAPPING FUNCTION FOR THE PATTERN
180
USE POSES FROM LOCATED SUB-PATTERNS TO DEFINE A "LOCATION" OF THE PATTERN
182

FIGURE 1

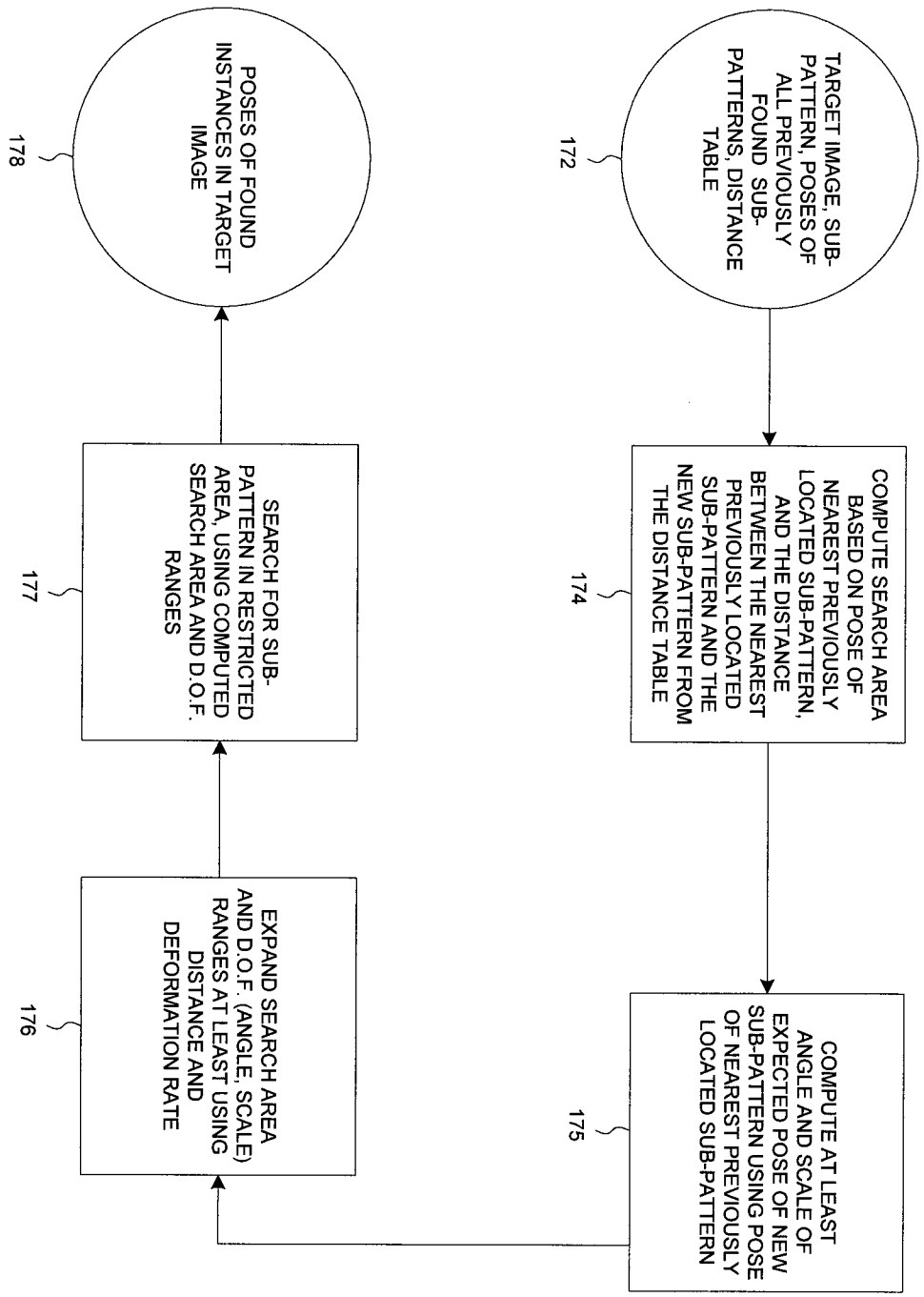

TARGET IMAGE, SUB-PATTERN, POSES OF ALL PREVIOUSLY FOUND SUB-PATTERNS, DISTANCE TABLE
172
COMPUTE SEARCH AREA BASED ON POSE OF NEAREST PREVIOUSLY LOCATED SUB-PATTERN, AND THE DISTANCE BETWEEN THE NEAREST PREVIOUSLY LOCATED SUB-PATTERN AND THE NEW SUB-PATTERN FROM THE DISTANCE TABLE
174
COMPUTE AT LEAST ANGLE AND SCALE OF EXPECTED POSE OF NEW SUB-PATTERN USING POSE OF NEAREST PREVIOUSLY LOCATED SUB-PATTERN
175
EXPAND SEARCH AREA AND D.O.F. (ANGLE, SCALE) RANGES AT LEAST USING DISTANCE AND DEFORMATION RATE
176
SEARCH FOR SUB-PATTERN IN RESTRICTED AREA, USING COMPUTED SEARCH AREA AND D.O.F. RANGES
177
POSES OF FOUND INSTANCES IN TARGET IMAGE
178

FIGURE 1A

FIGURE 2A

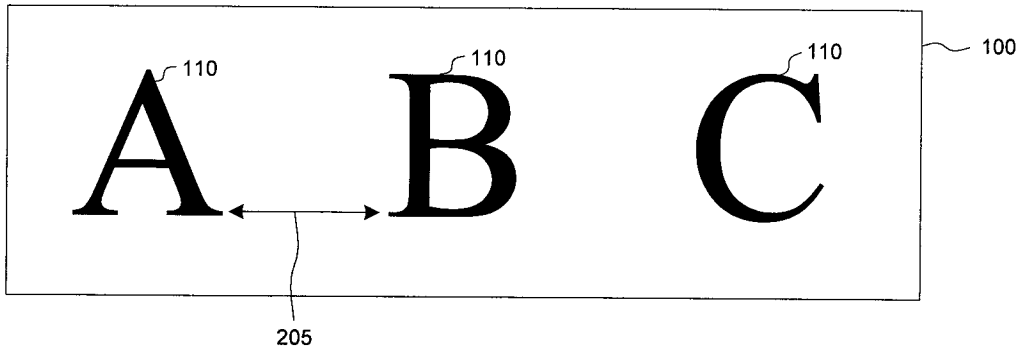


FIGURE 2B

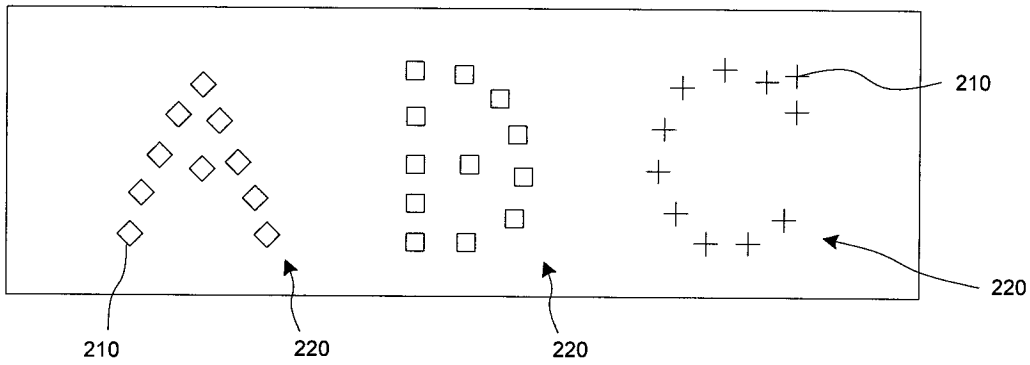


FIGURE 3A

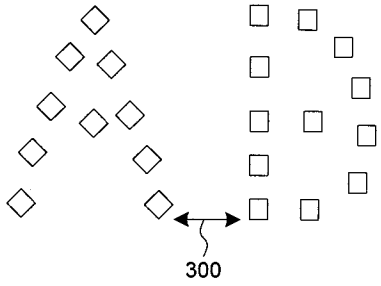


FIGURE 3B

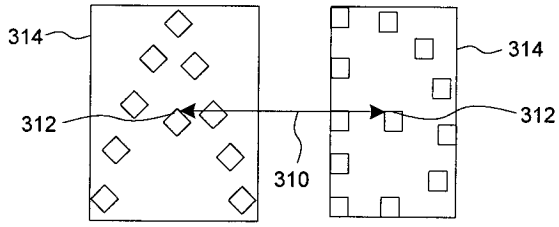
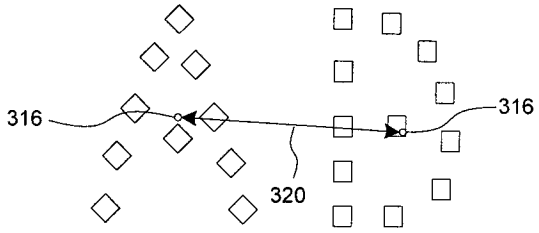


FIGURE 3C



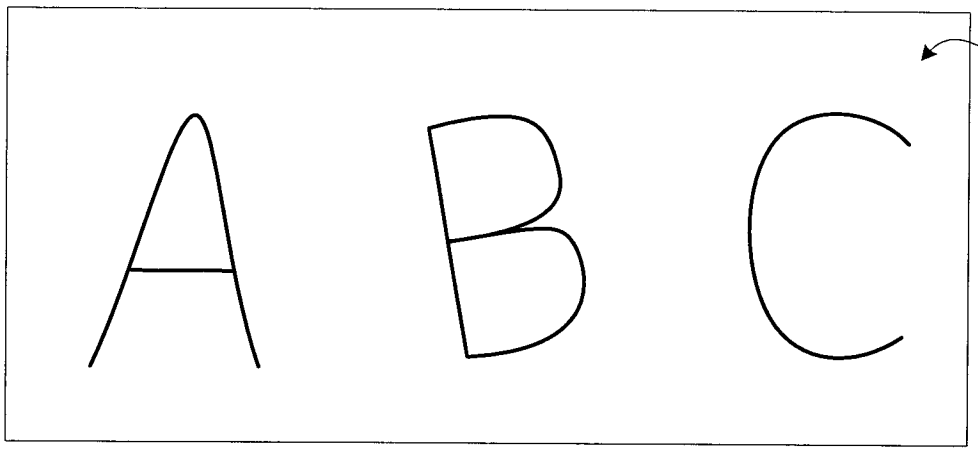


FIGURE 4A

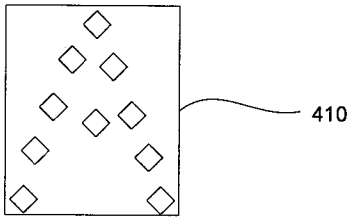


FIGURE 4B

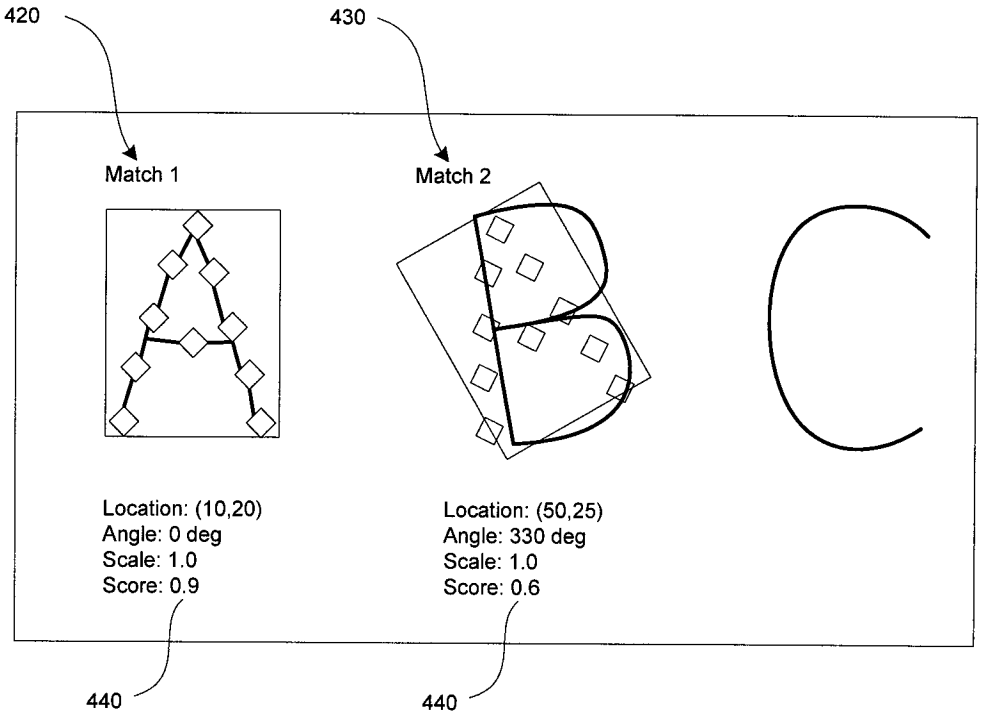


FIGURE 4C

FIGURE 5A

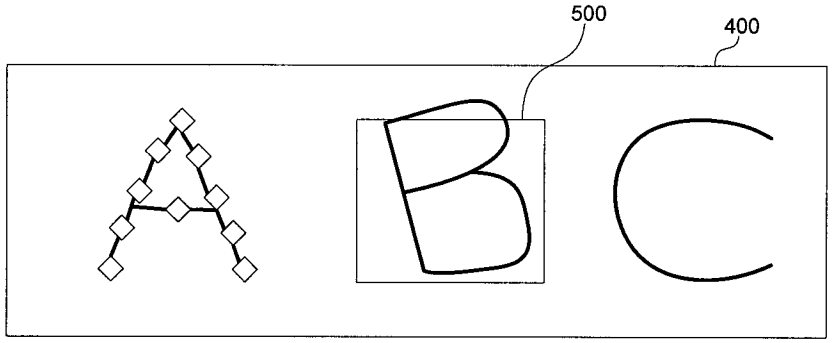


FIGURE 5B

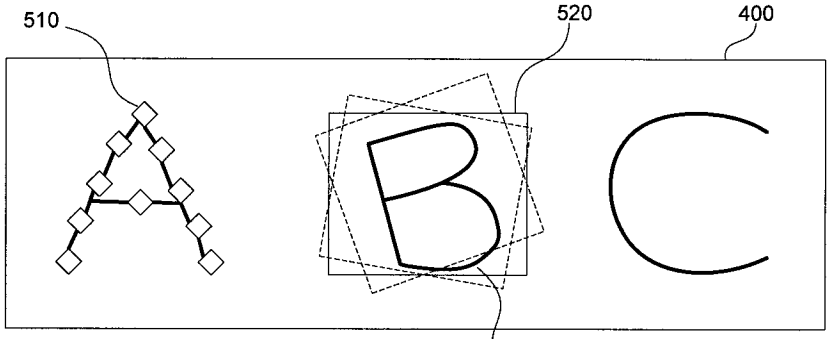


FIGURE 5C

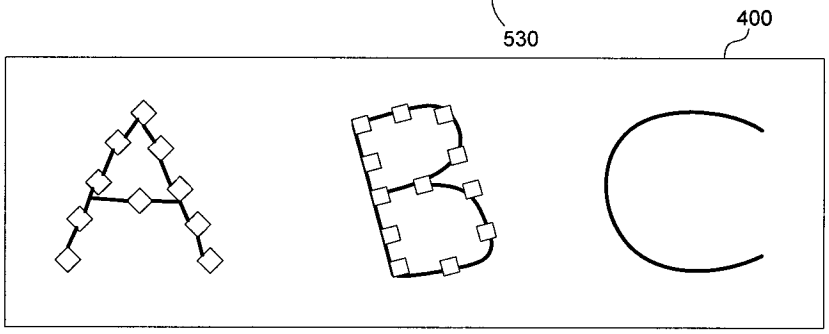


FIGURE 5D

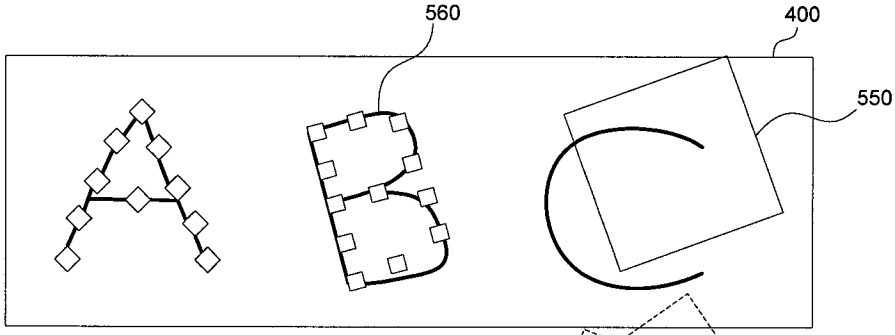


FIGURE 5E

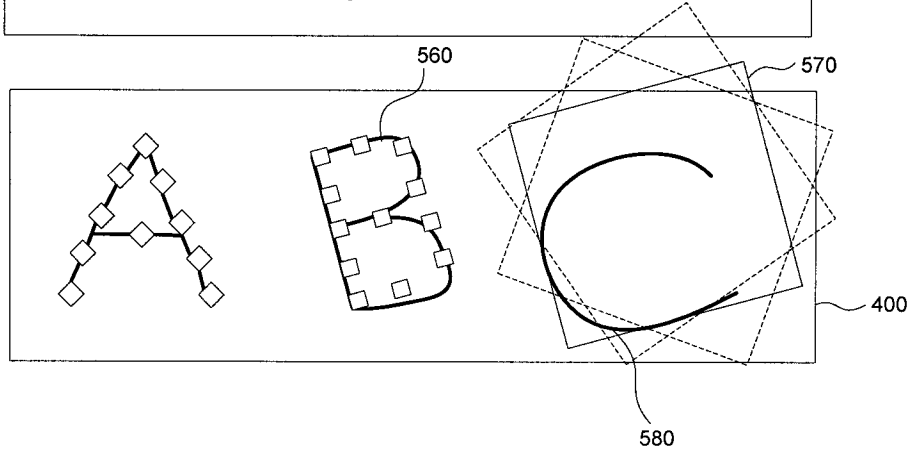


FIGURE 6A

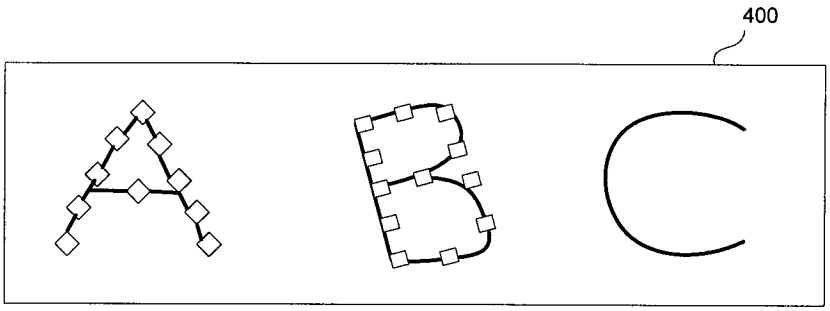


FIGURE 6B

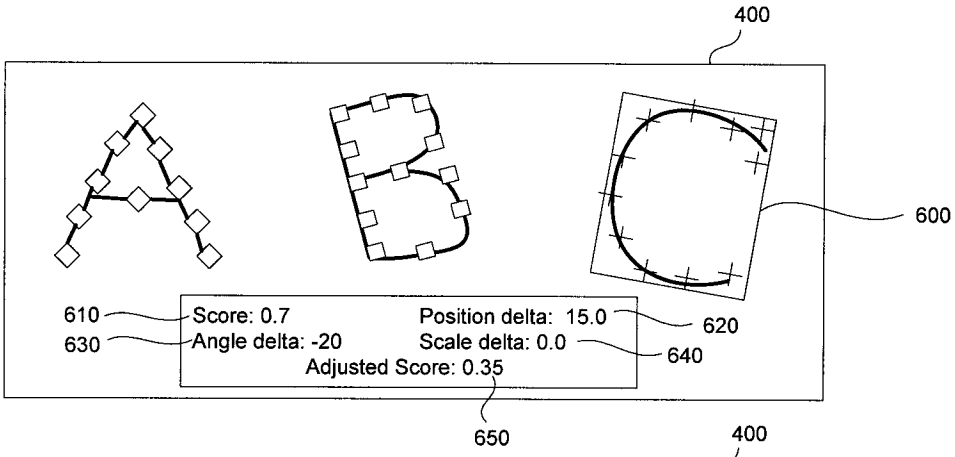


FIGURE 6C

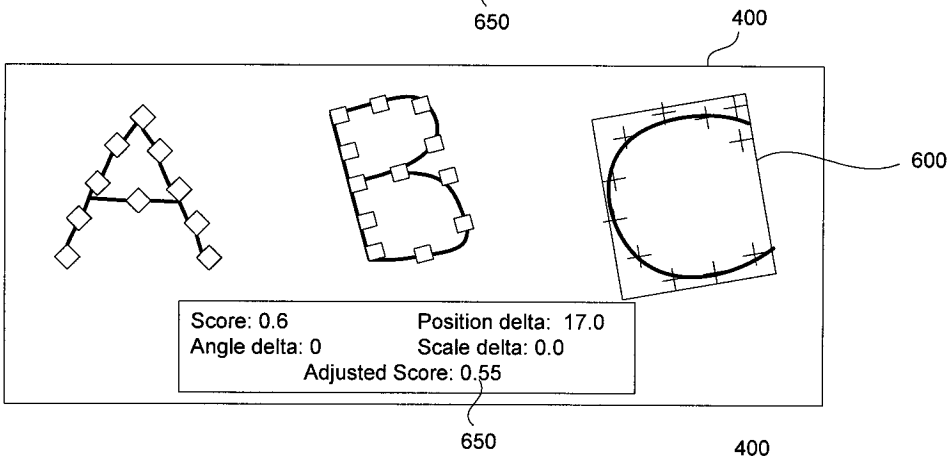


FIGURE 6D

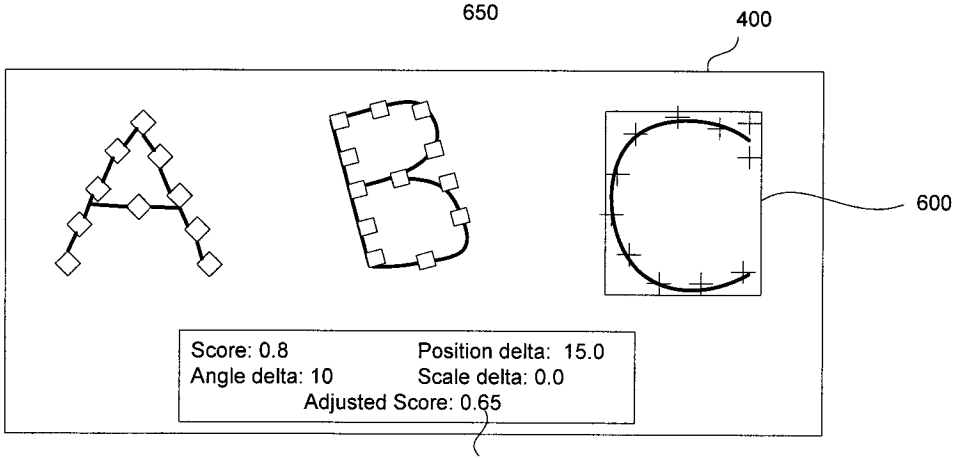
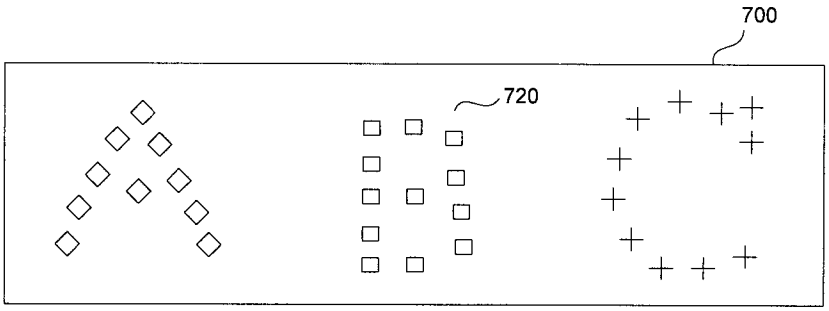
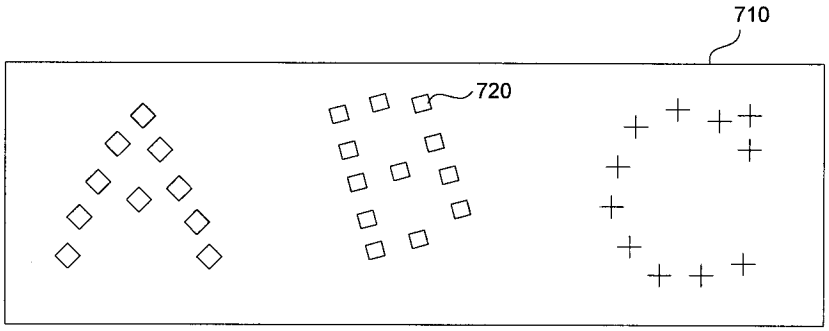


FIGURE 7A



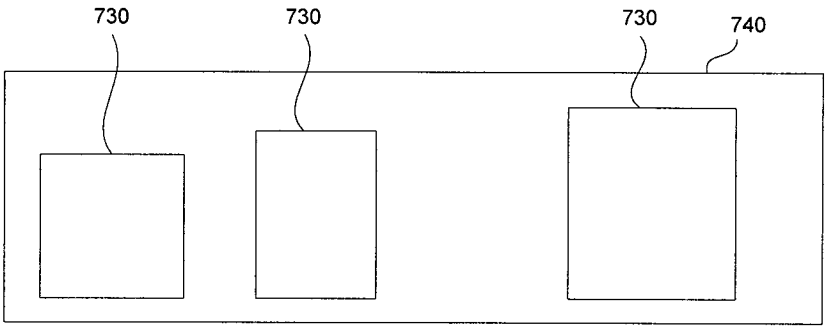
Source Points

FIGURE 7B



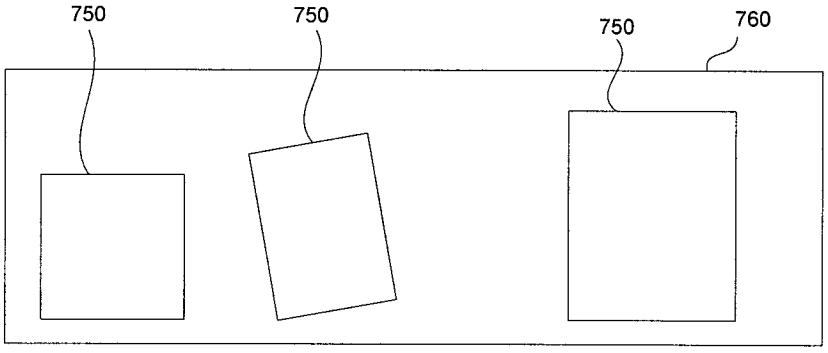
Destination Points

FIGURE 7C



Source Regions

FIGURE 7D



Destination Regions

FIGURE 8A

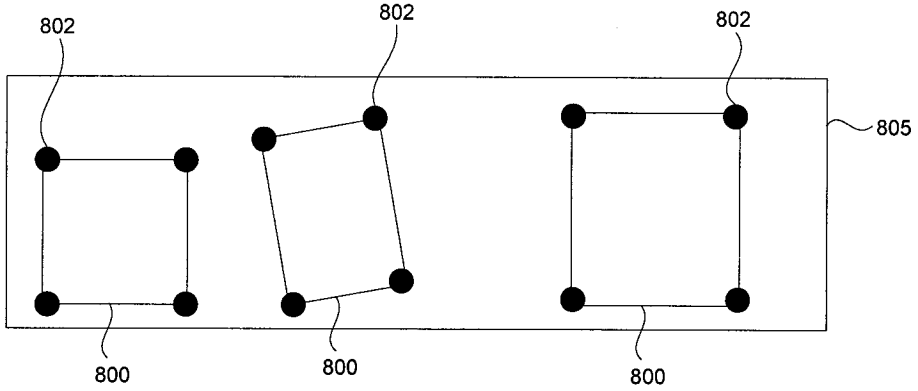


FIGURE 8B

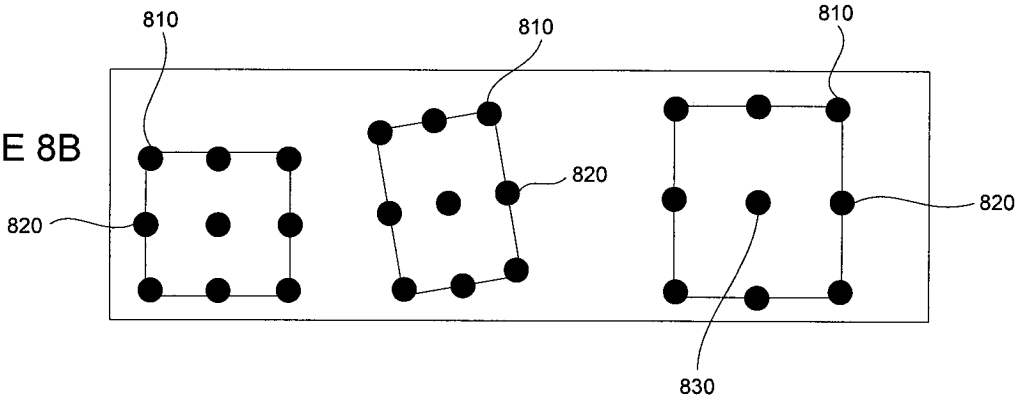
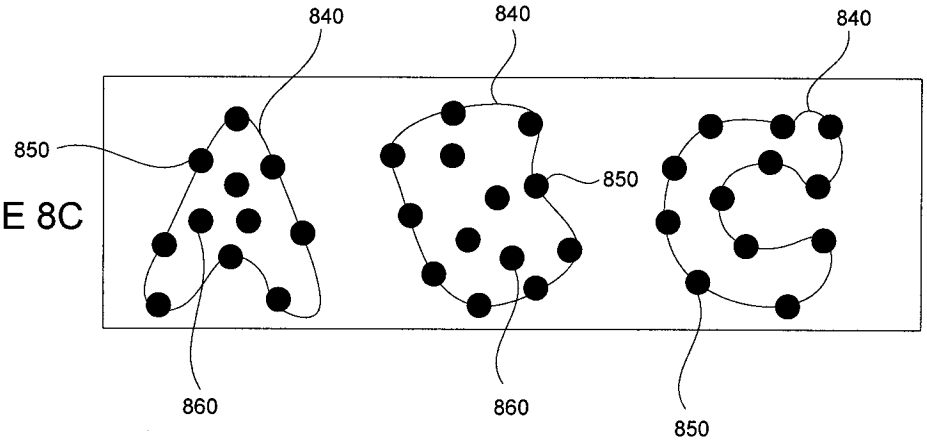


FIGURE 8C



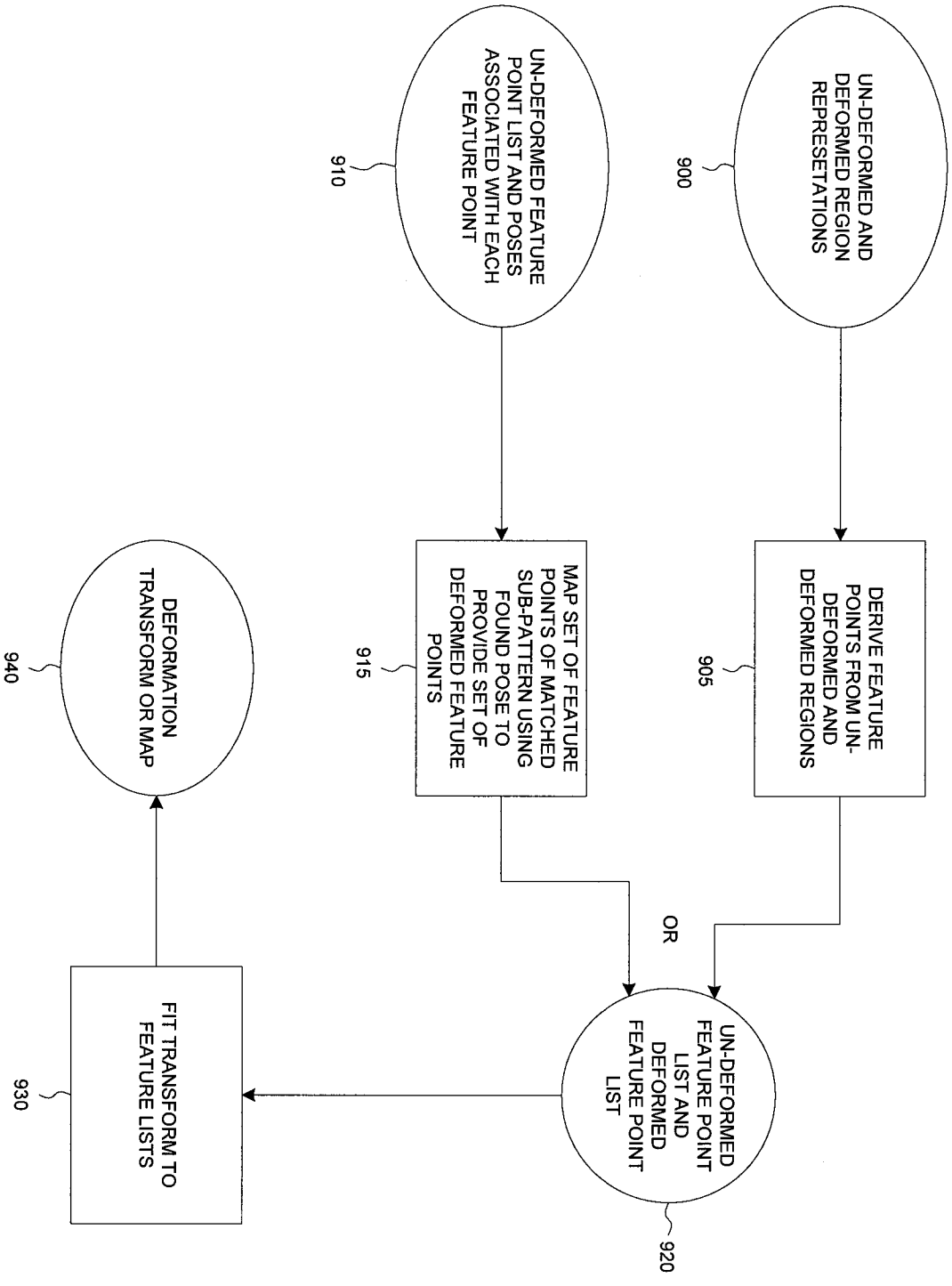
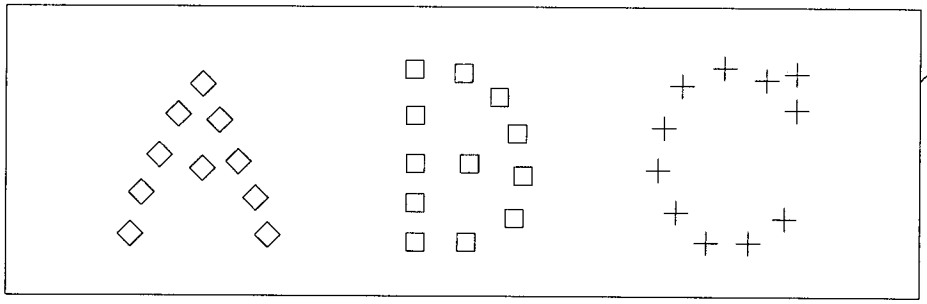

UN-DEFORMED AND DEFORMED REGION REPRESETATIONS
900
UN-DEFORMED FEATURE POINT LIST AND POSES ASSOCIATED WITH EACH FEATURE POINT
910
DERIVE FEATURE POINTS FROM UN-DEFORMED AND DEFORMED REGIONS
905
MAP SET OF FEATURE POINTS OF MATCHED SUB-PATTERN USING FOUND POSE TO PROVIDE SET OF DEFORMED FEATURE POINTS
915
OR
UN-DEFORMED FEATURE POINT LIST AND DEFORMED FEATURE POINT LIST
920
FIT TRANSFORM TO FEATURE LISTS
930
DEFORMATION TRANSFORM OR MAP
940

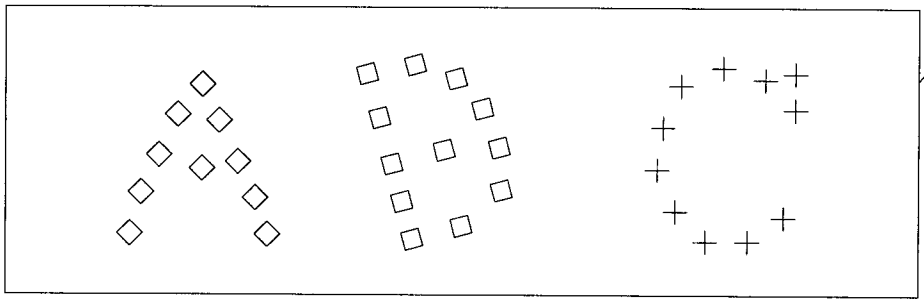
FIGURE 9

FIGURE 10A



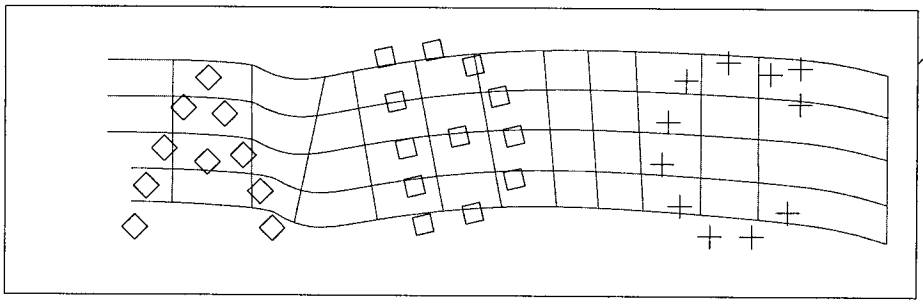
Source Points

FIGURE 10B



Destination Points

FIGURE 10C



Deformation Map